

Date: Friday, 12/9/2005 12:06:22 PM  
 User: Kim Johnston

## Process Sheet

|                                  |   |                 |                     |                         |               |                  |
|----------------------------------|---|-----------------|---------------------|-------------------------|---------------|------------------|
| <b>Customer</b>                  | : CU-DAR001 Dart Helicopters Services     |                 | <b>Drawing Name</b> | : WEARPAD               |               |                  |
| <b>Job Number</b>                | : 25187                                   |                 |                     |                         |               |                  |
| <b>Estimate Number</b>           | : 11350                                   |                 |                     |                         |               |                  |
| <b>P.O. Number</b>               | : N/A                                     |                 |                     | <b>Part Number</b>      | : D33401      |                  |
| <b>This Issue</b>                | : 12/9/2005                               | <b>S.O. No.</b> | : N/A               | <b>Drawing Number</b>   | : D3340 REV B |                  |
| <b>Prsht Rev.</b>                | : NC                                      |                 |                     | <b>Project Number</b>   | : N/A         |                  |
| <b>First Issue</b>               | : 12/9/2005                               | <b>Type</b>     | : PURCHASED PARTS   | <b>Drawing Revision</b> | : B           |                  |
| <b>Previous Run</b>              | : N/A                                     |                 |                     | <b>Material</b>         | : N/A         |                  |
| <b>Written By</b>                | : See comment below                       |                 |                     | <b>Due Date</b>         | : 12/30/2005  | Qty: 10 Um: Each |
| <b>Checked &amp; Approved By</b> | : See comment below                       |                 |                     |                         |               |                  |
| <b>Comment</b>                   | : Est: A 05.11.10 Preliminary issue AP/EC |                 |                     |                         |               |                  |

## Additional Product

Job Number:



| Seq. #: | Machine Or Operation: | Description :  |  |
|---------|-----------------------|--|--|
| 1.0     | PG                    | PURCHASING   |  |
|         |                       | Comment: PURCHASING<br>Issue P/O: <u>00000267</u> <i>Al 05/12/12</i><br>Email of ship DXF file to vendor<br>Laser Cut per Dwg D3340 flat pattern D3340-1<br>Material release note required |  |
| 2.0     | D33401F               | Wearplate  |  |
|         |                       | Comment: Qty.: 1.0000 U(s)/Unit Total : 10.0000 U(s)<br>Wearshoe   |  |
| 3.0     | PACKAGING 1           | PACKAGING RESOURCE #1  |  |
|         |                       | Comment: PACKAGING RESOURCE #1<br>Receive & Inspect For Transit Damage<br>Ensure material release note is attached   |  |
| 4.0     | QC6                   | DIMENSIONAL CHECK  |  |
|         |                       | Comment: DIMENSIONAL CHECK<br>Inspect dimensions   |  |
| 5.0     | BRAKE NC              | NC BRAKE   |  |
|         |                       | Comment: NC BRAKE<br>Deburr if necessary<br>Form on brake as per Dwg D3340 using Jigs DT and DT  |  |

PTO  
Next  
page

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

Date: Friday, 12/9/2005 12:06:22 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPAD

Job Number: 25187

Part Number: D33401

Job Number:



Seq. #: Machine Or Operation:

Description :

6.0 QC5

INSPECT WORK TO CURRENT STEP



106-01-05

Comment: INSPECT WORK TO CURRENT STEP

7.0 POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3

106-01-12 8

8.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

9.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 66

106-01-13 (S) cl

10.0 DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

(S) 06/06/

Job Completion



106-01-13

PTO

| W/O:     |      | WORK ORDER CHANGES                       |    |          |     |                                     |                          |
|----------|------|--|----|----------|-----|-------------------------------------|--------------------------|
| DATE     | STEP | PROCEDURE CHANGE                         | By | Date     | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
| 06.01.05 | U/   | Took 1 for template. Identify as DT 8836 | J  | 06.01.05 | 1   | JB<br>02/01/05                      | J<br>06.01.05            |
|          |      |  |    |          |     |                                     |                          |

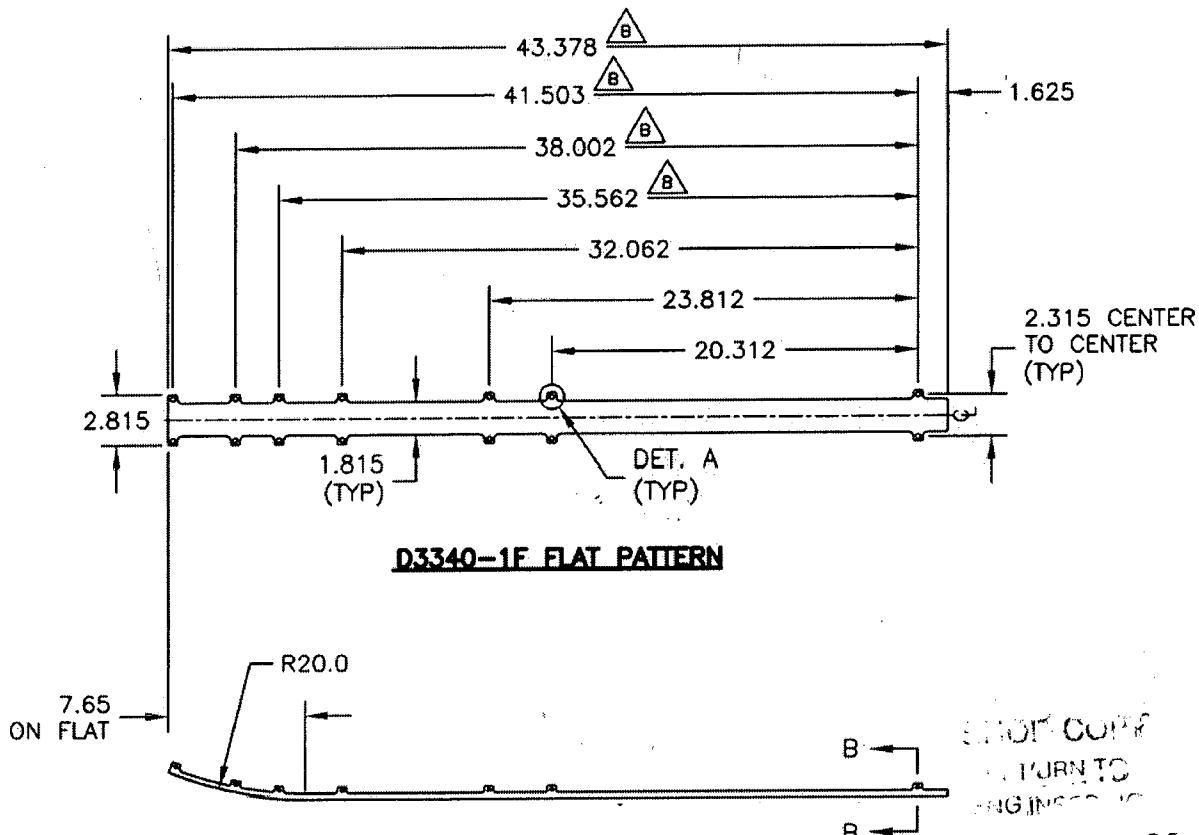
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR:     |      | WORK ORDER NON-CONFORMANCE (NCR)   |                             |                                 |                |                           |                       |                          |
|----------|------|--|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE     | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|          |      |  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
| 06.01.05 | U/   | I strip, middle hole badly deformed during laser cut.<br> | JB<br>02/01/05              | Scrap: destroy.                 | J<br>06.01.05  | J<br>06.01.05             | JB<br>02/01/05        | J<br>06.01.05            |
|          |      |  |                             |                                 |                |                           |                       |                          |
|          |      |  |                             |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

**DART**

|                           |                            |   |
|---------------------------|----------------------------|---|
| DESIGN<br>MB              | DRAWN BY<br>MB             | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA            |
| CHECKED <i>[initials]</i> | APPROVED <i>[initials]</i> | DRAWING NO. D3340 REV. B<br>SHEET 1 OF 11                           |
| DATE<br>05.11.22          |                            | TITLE<br>SKIDTUBE PROTECTOR SCALE<br>1:10                           |
| A                         | 05.06.09                   | NEW ISSUE   |
| B                         | 05.11.22                   | ADD DETAIL D, CORRECT FLAT PATTERNS<br>D3340-1/-3/-7/-9/-13/-19/-23 |

**RELEASED**  
05.11.28**D3340-1 FORWARD SKIDTUBE PROTECTOR****NOTES:**

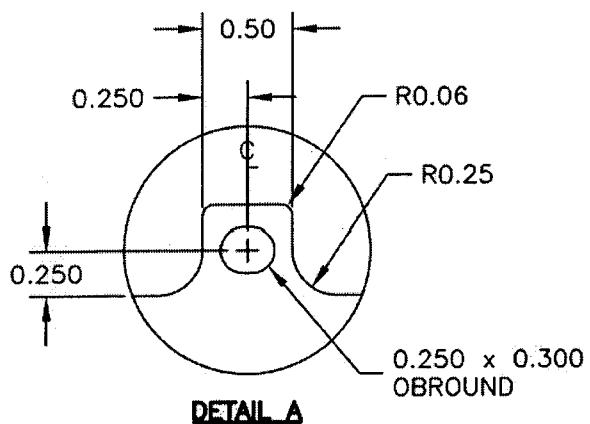
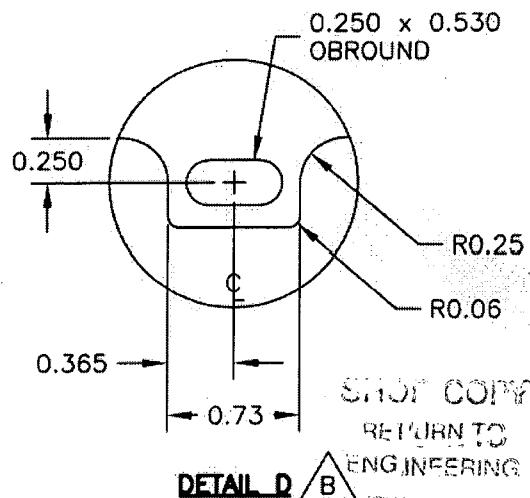
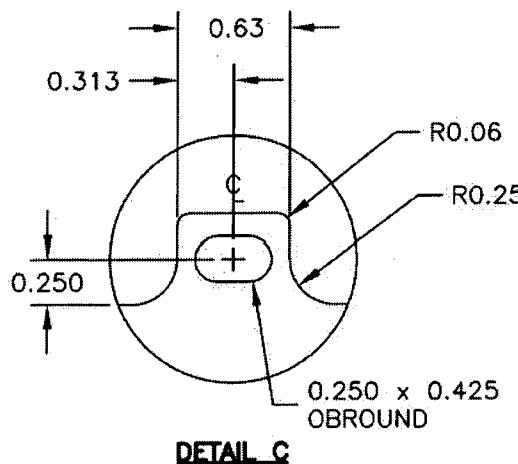
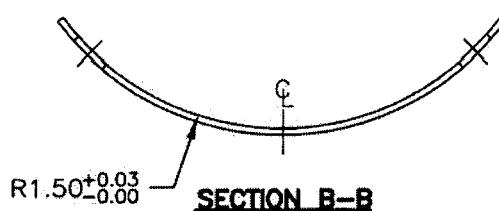
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

25187

EMBODIMENT  
1 TURN TO  
ENGINEER'S  
TP 0017

**DART**

|                              |                               |   |                          |
|------------------------------|-------------------------------|---|--------------------------|
| DESIGN<br>MB                 | DRAWN BY<br>MB                | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                          |
| CHECKED<br><i>[initials]</i> | APPROVED<br><i>[initials]</i> | DRAWING NO.<br>D3340                              | REV. B<br>SHEET 11 OF 11 |
| DATE<br>05.11.22             |                               | TITLE<br>SKIDTUBE PROTECTOR                       | SCALE<br>1:1             |

**RELEASED**  
05-11-28

25187

Copyright © 2005 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

INSPECTION CERTIFICATE  
MATERIAL TEST/INSPECTION CERTIFICATES

YIEH MAU CORP.

INVOICE NO.: FORM A65  
COMMODITY: PRIME COLD ROLLED STAINLESS STEEL SHEET AISI 304 NO.4 (S/C)  
FINISH, WITH 100 MIC. FILM ON MAIN SIDE, WITH BACK PASS,  
SLITTED EDGE, AISI 304, #B FINISH, WITH PAPER INTERLEAVED,  
SLITTED EDGE.

SPECIFICATION:  
CUSTOMER: INTEGRIS METALS LTD

1. 地址: 台北市基隆路三段345號  
245, SHILIN AN RD., LI CHU HSING  
TAIWAN R.O.C.  
TEL: (02) 8723445 FAX: (02) 8730036  
CERTIFICATE NO: 10111182  
DATE OF ISSUE: 1/24/2004

| (ITEM NO)<br>SIZE          | NO. | Weight<br>(N.W.) |        | Heat No. | ID NO.        | Physical Properties<br>Tensile Test<br>GL-50 mm/min |                              |             |     |     | Chemical Composition<br>(%) |           |            |            |            |           |            |           |
|----------------------------|-----|------------------|--------|----------|---------------|---|------------------------------|-------------|-----|-----|-----------------------------|-----------|------------|------------|------------|-----------|------------|-----------|
|                            |     | KGS              | LBS    |          |               | Y.S.<br>(N/mm <sup>2</sup> )                        | T.S.<br>(N/mm <sup>2</sup> ) | E.L.<br>(%) | HRB | HV  | C<br>x100                   | S<br>x100 | Mn<br>x100 | P<br>x1000 | S<br>x1000 | N<br>x100 | Cr<br>x100 | N<br>x100 |
| AISI 304-BB<br>(7225-4228) | 1   | 1,465            | 3,230  | YU231320 | 3AS44453B-21  | 268   | 665                          | 56          | 81  | 156 | 4.8                         | 51        | 119        | 24         | 2          | 804       | 1821       | 2.7       |
| 24GA/48"X120"              | 1   | 1,464            | 3,228  | YU231320 | 3AS44453B-22  | 268   | 665                          | 56          | 81  | 156 | 4.8                         | 51        | 119        | 24         | 2          | 804       | 1821       | 2.7       |
| 24GA/48"X120"              | 1   | 1,464            | 3,228  | YU230510 | 38S376008-51  | 290   | 673                          | 53          | 82  | 162 | 5.4                         | 50        | 126        | 26         | 3          | 815       | 1819       | 2.4       |
| (7225-5860)                | 1   | 1,375            | 3,031  | YU230510 | 38S376008-52  | 290   | 673                          | 53          | 82  | 162 | 5.4                         | 50        | 126        | 26         | 3          | 815       | 1819       | 2.4       |
| 22GA/48"X120"              | 1   | 1,464            | 3,228  | YU230510 | 3AS43434A-1   | 312   | 666                          | 61          | 82  | 161 | 4.1                         | 49        | 112        | 24         | 2          | 809       | 1821       | 2.8       |
| (7225-5860)                | 1   | 1,445            | 3,186  | YU134975 | 3AS42732-4    | 301   | 664                          | 49          | 84  | 166 | 3.7                         | 40        | 118        | 27         | 5          | 810       | 1824       | 3.7       |
| 18GA/48"X120"              | 1   | 1,497            | 3,300  | YU231066 | 3AS42732-5    | 301   | 664                          | 49          | 84  | 166 | 3.7                         | 40        | 118        | 27         | 5          | 810       | 1824       | 3.7       |
| (7226-2619)                | 1   | 1,453            | 3,203  | YU231066 | 3AS42732-6    | 301   | 664                          | 49          | 84  | 166 | 3.7                         | 40        | 118        | 27         | 5          | 810       | 1824       | 3.7       |
| 18GA/48"X120"              | 1   | 1,455            | 3,208  | YU231066 | 3AS42917A-1   | 302   | 650                          | 53          | 82  | 159 | 4.5                         | 52        | 123        | 28         | 4          | 810       | 1822       | 2.7       |
| (7226-5169)                | 1   | 1,423            | 3,137  | YU231143 | 3AS42917A-2   | 302   | 650                          | 53          | 82  | 159 | 4.5                         | 52        | 123        | 28         | 4          | 810       | 1822       | 2.7       |
| 16GA/48"X120"              | 1   | 1,424            | 3,139  | YU231143 | 3AS42917A-3   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| (7226-5169)                | 1   | 1,420            | 3,131  | YU231143 | 3AS42917A-4   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| (7226-7049)                | 1   | 1,441            | 3,177  | YU231075 | 3AS42917A-5   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| 16GA/48"X120"              | 1   | 1,441            | 3,177  | YU231075 | 3AS42917A-6   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| (7226-8053)                | 1   | 1,420            | 3,131  | YU231075 | 3AS42917A-7   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| 14GA/48"X120"              | 1   | 1,420            | 3,131  | YU231075 | 3AS42917A-8   | 302   | 650                          | 52          | 83  | 162 | 4.2                         | 48        | 119        | 28         | 6          | 806       | 1813       | 3.4       |
| (7226-8240)                | 1   | 1,446            | 3,188  | YU135202 | 3AS45623A-211 | 301   | 641                          | 53          | 81  | 157 | 5.1                         | 51        | 114        | 30         | 9          | 806       | 1822       | 3         |
| (7226-8277)                | 1   | 1,405            | 3,097  | YU135202 | 3AS45823A-213 | 301   | 641                          | 53          | 81  | 157 | 5.1                         | 51        | 114        | 30         | 9          | 806       | 1822       | 3         |
| 14GA/48"X120"              | 1   | 1,540            | 3,395  | YU135202 | 3AS45823A-214 | 301   | 641                          | 53          | 81  | 157 | 5.1                         | 51        | 114        | 30         | 9          | 806       | 1822       | 3         |
| 14GA/48"X120"              | 18  | 25,998           | 57,317 |          |               |   |                              |             |     |     |                             |           |            |            |            |           |            |           |

Read test good for all Heat NO.

Remarks: NO MERCURY CONTAMINATION  
WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS  
BEEN MADE IN ACCORDANCE WITH THE RULES OF THE MILL CERTIFICATE.

PRODUCT IN ACCORDANCE WITH ASTM A240, A480,  
A262B, ASME SA240, Q-QST766D.

YIEH MAU CORP.

*[Signature]*  
Manager of Quality Assurance Department

2094 304 0455

(0.037)

PO # [REDACTED] 267 196



New Zealand Steel Limited  
Glenbrook, South Auckland  
Postal Private Bag 92121, Auckland, New Zealand  
Telephones: (09) 375 8998 / 375 8111 Auckland  
(09) 235 8089 / 235 3535 Waiuku  
Fax: (09) 375 8959

## TEST CERTIFICATE

Ref: S210/22495

| CUSTOMER     |  | Wilkinson P50323 D1001       |   |      |    |       |    |          |    |      |   |       |   |           | SPECIFICATION ASTMA1808 CS Type A                |       |  |      |  |              | CERTIFICATE No TC112397 |              |  |       |  |               |  |
|--------------|--|------------------------------|---|------|----|-------|----|----------|----|------|---|-------|---|-----------|--|-------|--|------|--|--------------|-------------------------|--------------|--|-------|--|---------------|--|
| CUSTOMER D/N |  | 90-2JN-686                   |   |      |    |       |    |          |    |      |   |       |   |           | PRODUCT CRA WIDE COIL                            |       |  |      |  |              | PAGE 1 of 1             |              |  |       |  |               |  |
| MILL QIN     |  | 480737                       |   |      |    |       |    |          |    |      |   |       |   |           | DIMENSIONS 0.055" x 48" x Coil                   |       |  |      |  |              | DATE 09 June 2005       |              |  |       |  |               |  |
| PACK NUMBER  |  | CHEMICAL COMPOSITION PERCENT |   |      |    |       |    |          |    |      |   |       |   |           | MECHANICAL TESTS (TEST SPECIFICATION - ASTMA370) |       |  |      |  |              |                         |              |  |       |  |               |  |
| HEAT No      |  | C Si Mn P S Cu Ni Cr Mo V    |   | x100 |    | x1000 |    | Nb Ti Al |    | B N2 |   | CE( ) |   | BEND 180° |  | YIELD |  | T.S. |  | %ELONG G.L.= |                         | HARDNESS HRB |  | r ( ) |  | LENGTH (feet) |  |
| R9-459713-00 |  | 641758                       | 4 | TR   | 18 | 4     | 16 | 13       | 19 | 10   | 5 | 3     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 54    |  | 1585          |  |
| R9-459714-00 |  | 641758                       | 4 | TR   | 18 | 4     | 16 | 13       | 19 | 10   | 5 | 3     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 54    |  | 1457          |  |
| R9-459715-00 |  | 641513                       | 5 | TR   | 18 | 9     | 18 | 12       | 17 | 15   | 1 | 6     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 48    |  | 1375          |  |
| R9-459716-00 |  | 641513                       | 5 | TR   | 18 | 9     | 18 | 12       | 17 | 15   | 1 | 6     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 48    |  | 1473          |  |
| R9-459717-00 |  | 641756                       | 5 | TR   | 20 | 12    | 19 | 12       | 18 | 19   | 1 | 7     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 48    |  | 1631          |  |
| R9-459718-00 |  | 641756                       | 5 | TR   | 20 | 12    | 19 | 12       | 18 | 19   | 1 | 7     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 48    |  | 1093          |  |
| R9-459719-00 |  | 641756                       | 5 | TR   | 20 | 12    | 19 | 12       | 18 | 19   | 1 | 7     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 50    |  | 1562          |  |
| R9-459720-00 |  | 641756                       | 5 | TR   | 20 | 12    | 19 | 12       | 18 | 19   | 1 | 7     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 50    |  | 1535          |  |
| R9-460380-00 |  | 641761                       | 4 | TR   | 20 | 13    | 17 | 12       | 18 | 25   | 5 | 8     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 50    |  | 1581          |  |
| R9-460381-00 |  | 641758                       | 4 | TR   | 18 | 4     | 16 | 13       | 19 | 10   | 5 | 3     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 49    |  | 1562          |  |
| R9-460382-00 |  | 641758                       | 4 | TR   | 18 | 4     | 16 | 13       | 19 | 10   | 5 | 3     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 49    |  | 1503          |  |
| R9-461458-00 |  | 642309                       | 2 | TR   | 18 | 10    | 20 | 11       | 17 | 19   | 1 | 6     | 1 | 1         |  |       |  |      |  |              |                         |              |  | 48    |  | 1785          |  |

|  |  |   |  |   |
|--|--|---|--|---|
| YIELD<br>(A)=0.2% PROOF STRESS<br>(B)=LOWER YIELD STRESS | GAUGE LENGTH (G.L.)<br>(A)=200mm<br>(B)=50mm | PLASTIC STRAIN RATIO (r)<br>(A)=r0<br>(B)=r90 | IMPACT TEST<br>(A)=10mm x 10mm<br>(B)=7.5mm x 10mm<br>(E)=5mm x 10mm | CARBON EQUIVALENT VALUE (CE)<br>(C)=5mm x 5mm<br>(D)=2.5mm x 10mm<br>(E)=C+Mn/6<br>(B)=C+Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15<br>(D)=C+Mn/6+S/24 |
|--|--|---|--|---|

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND INSPECTED  
WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION

APPROVED *Satish Misra*  
QC METALLURGIST

16 ga ms p.o.p 146, 267, 245,



New Zealand Steel Limited  
Glenbrook, South Auckland  
Postal: Private Bag 92121, Auckland, New Zealand  
Telephone: (09) 375 8999 / 375 8111 Auckland  
(09) 235 8089 / 235 3535 Waikato  
Fax: (09) 375 8959

## TEST CERTIFICATE

Ref: 5379/23650

Reissued 22/8/2005

|              |            |              |
|--------------|------------|--------------|
| CUSTOMER     | Wilkinson  | P5C5C5-AI002 |
| CUSTOMER O/N | 90-21N-742 |              |
| MILL O/N     | 486968     |              |

|  |  |  |  |  |  |  |  |  |  |  |  |                                |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--------------------------------|--|
| SPECIFICATION <u>ASTMA1008 CS Type A</u> |  |  |  |  |  |  |  |  |  |  |  | CERTIFICATE No <u>TC116858</u> |  |
| PRODUCT <u>CRA WIDE COIL</u>             |  |  |  |  |  |  |  |  |  |  |  | PAGE <u>1 of 1</u>             |  |
| DIMENSIONS <u>0.033" x 48" x Coil</u>    |  |  |  |  |  |  |  |  |  |  |  | DATE <u>19 August 2005</u>     |  |

| PACK NUMBER  | HEAT No | CHEMICAL COMPOSITION PERCENT |    |    |       |    |    |    |    |    |   |        |      | MECHANICAL TESTS (TEST SPECIFICATION - ASTMA370) |      |    |       |      |       |      |        |          |     |               |
|--------------|---------|------------------------------|----|----|-------|----|----|----|----|----|---|--------|------|--|------|----|-------|------|-------|------|--------|----------|-----|---------------|
|              |         | C                            | Si | Mn | P     | S  | Cu | Ni | Cr | Mo | V | Nb     | Ti   | Al   | B    | N2 | CE( ) | BEND | YIELD | T.S. | %ELONG | HARDNESS | r   | LENGTH (feet) |
|              |         | x100                         |    |    | x1000 |    |    |    |    |    |   | x10000 | x100 |  | 180° |    |       |      |       |      |        | G.L=     | HRB | ( )           |
| R9-466080-00 | 845423  | 6                            | TR | 21 | 11    | 16 | 17 | 20 | 16 | 2  | 3 | 1      | 3    |  |      |    | Good  |      |       |      |        | 50       |     | 2700          |
| R9-466081-00 | 845423  | 6                            | TR | 21 | 11    | 16 | 17 | 20 | 16 | 2  | 3 | 1      | 3    |  |      |    | Good  |      |       |      |        | 50       |     | 2700          |
| R9-466082-00 | 845253  | 6                            | I  | 21 | 10    | 12 | 28 | 30 | 15 | 2  | 3 | 1      | 3    |  |      |    | Good  |      |       |      |        | 47       |     | 2651          |
| R9-466083-00 | 845253  | 6                            | I  | 21 | 10    | 12 | 28 | 30 | 15 | 2  | 3 | 1      | 3    |  |      |    | Good  |      |       |      |        | 47       |     | 2651          |

|  |  |  |  |  |
|--|--|--|--|--|
| YIELD<br>(A)=0.2% PROOF STRESS<br>(B)=LOWER YIELD STRESS | GAUGE LENGTH (G.L.)<br>(A)=200mm<br>(B)=50mm | PLASTIC STRAIN RATIO (r)<br>(E)=2"<br>(A)=0<br>(B)=90<br>(D)=5.65 ? So<br>(F)=8" | IMPACT TEST<br>(C)=5mm x 5mm<br>(D)=2.5mm x 10mm<br>(E)=5mm x 10mm | CARBON EQUIVALENT VALUE (CE)<br>(A)=C+Mn/6<br>(B)=C+ Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15<br>(C)=C+Mn/6+Si/24<br>(D)= |
|--|--|--|--|--|

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND INSPECTED  
WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION

APPROVED Surish Misra  
QC METALLURGIST

PO# 267, 146,  
20ga ns